5300

PRODUCT GUIDE

Project 25 Trunked
Project 25 Conventional
SMARTNET® II
SmartZone®
Conventional
Encrypted
Digital/Analog

EFJohnson®

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

Table of Contents

Company Introduction

Celebrating it's 80th anniversary in 2003, the E.F. Johnson Company provides digital Project 25-compliant interoperable wireless communications equipment and infrastructure for federal, state and local agencies involved with homeland security and public safety. EFJohnson, headquartered in Waseca, Minnesota, was one of the first developers of wireless communications products to be fully compliant with federal government interoperability requirements.

During it's eight decades in business, beginning as a mail order radio parts supplier in 1923, EFJohnson has attained numerous milestones and become a vital part of the wireless communications industry.

Early on, growth came so quickly that founders, Edgar and Ethel Johnson, relocated the business twice in the first ten years as they outgrew each new location. Then, in 1940 the company began a period of five consecutive years of expansion and dedicated 100% of it's production capacity to defense needs for WWII. In 1944 EFJohnson received the prestigious Army-Navy E Award in recognition of outstanding production efficiency.

In 1949 the company manufactured the first complete amateur transmitter, the Viking I and from 1959–1976 EFJohnson dominated the citizens band radio market. EFJohnson's role in the CB market was so vital that in 1975 Viking Messenger I and III units were presented to the Smithsonian Institute where they are still on display in the National Museum of American History.

EFJohnson entered the business / industrial radio market in 1961 with the introduction of the Messenger 202 AM Transceiver. Then, in 1967, the company introduced FM business two-way radios. In 1976 the E.F. Johnson Company became public and stock was listed on the New York Stock Exchange.

In 1980 EFJohnson introduced the LTR® 800 MHz trunked radio system which became the industry's *de facto standard* in trunking systems. Based on EFJohnson's proven technology, Multi-Net® emerged as a wide-area trunked radio system in 1989, and in 1998, LTR-Net® trunking was introduced, improving LTR trunking by adding additional user features, system management tools and network technology.

By 1995, the company had increased sales worldwide and was awarded the President's "E" Award for excellence in exporting.

Continuing EFJohnson's heritage of innovation and excellence into the 21st century, the first multiple protocol portable radio working in analog, SMARTNET®/SmartZone®, Multi-Net and Project 25 systems was introduced in 2001. Then, in 2002, EFJohnson introduced it's first Netelligent™ product, a Voice over Internet Protocol (VoIP) repeater that integrates Project 25 and Internet technologies.

Over the years, we've built a reputation for meeting our customers' communication needs with innovative applications of radio frequency technology. Today, EFJohnson products are sold in the United States and 56 other countries through a network of nearly 500 dealers and a direct sales organization.

Now, in a time dominated by Homeland Security issues where "Interoperability" has become more than an industry buzz word, EFJohnson stands ready. The company's Project 25 compliant digital offerings make EFJohnson a compelling choice for first responders or any agency involved in Homeland Security. EFJohnson has built strong relationships with numerous local, state and federal government agencies and is agile enough to deliver the highest level of customer service, regardless of contract size.

Product Description

The 5300 Series mobile is EFJohnson's latest addition to the full product line of APCO 16 and Project 25-compliant radios. The mobile is available in VHF, UHF, and 800 MHz frequency ranges. Designed for durability by organizations that demand the most from their communications, the 5300 Series radio meets the changing needs of federal, state, and local government users, as well as industrial and public service applications.

With forward, backward, and multiple protocol compatibility, the 5300 mobile radio allows communications on APCO Project 25 CAI (Common Air Interface) trunking and conventional radio systems, SMARTNET® II and SmartZone® trunked radio systems, and conventional analog radio communication systems. Advanced software controls permit the user to have multiple protocols in the radio at the same time and allows the user to switch protocols when needed with the Multiple System Select feature. Also, the ability to have custom-defined and programmable buttons and switches ensures that the users' needs and requirements are taken into account with menu controls that direct the user easily through the selection process.

Other advanced features of the 5300 mobile radio include Encrypted Communications allowing: analog voice scrambling, SecureNet™ DES/DES-XL™ or Project 25 DES/DES-OFB/AES encryption.

The 5300 mobile product line includes:
Digital Narrowband
Backward Compatibility to Wideband
   and Narrowband Analog
Dash, Remote-Mount, or Dual-Mount
High Power Transmitter (100W variable)
Standard Power (15W-50W variable)

System Options:
Project 25 Trunked (upgradeable)
Project 25 Conventional
SMARTNET® II
SmartZone®

Encryption:
SecureNet™ DES, P25 DES-OFB, AES, DES-XL

5300 Frequency Availability:
VHF   136–174 MHz
        146–174 MHz
UHF   380–470 MHz*
        403–470 MHz
800   806–870 MHz

* Federal customers only.

Dash-Mount Version

Market Applications

The 5300 Series Digital/Analog Mobile Radio provides wideband and narrowband conventional analog as well as narrowband and wideband digital operation. In addition, the mobile radio provides Project 25 and SMARTNET® II/SmartZone® Trunking capabilities. Add to this, compatibility with the Project 25 Common Air Interface, and this rugged mobile meets the needs of state, local, and federal government users as well as business, industrial, and public safety applications. The 5300 mobile easily switches from communication between SMARTNET II, Project 25 approved equipment, and conventional FM equipment with one simple turn of the channel knob.

The features and functions of the 5300 mobile, and its compliance with APCO 16 and Project 25 standards, make it the ideal solution for your radio applications. This radio enables you to easily migrate from analog to digital.

5300 Series
DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

HARDWARE CONFIGURATIONS

Dash-Mount
Model: 53X7(or 5)–1

The dash-mount version is the standard configuration. Included in this configuration is the radio, standard microphone, 22 ft. power cable and hardware kit, accessory wire kit, and standard mounting bracket. Typical applications are public service and transportation.

Remote-Mount
Model: 53X8(or 6)–0

For applications where cabin space is limited. The remote-mount configuration consists of the radio with a blank front panel, a remote control unit, standard microphone, 17 ft. remote cable, 22 ft. power cable and hardware kit, accessory wire kit, and standard mounting bracket.

Handheld Controller
Model: 53X8(or 6)–5

The handheld controller, designed for law enforcement agencies and surveillance missions, gives you full radio functionality in the palm of your hand. The HHC is used with a remote-mount radio. This configuration consists of the radio with a blank front panel, handheld controller, Junction Box and cabling, and remote speaker. The remote speaker (250–0150–005) must be ordered separately.

Siren
Model: 53X8(or 6)–X2

The remote-mount radio configuration can be ordered with a Siren Control Cable which allows connection to the Siren Kit (250-5300-100). The kit consists of a Siren Controller, amplifier box, and controller cable. To complete the configuration, add a 585-5300-007 or 585-5300-009 loudspeaker. (Pictured with a 100W radio, HHC, and 585-5300-007 loudspeaker.)

5300 *Series*

Hardware Configurations—Continued

Double Remote Control Head
Model: 53X8(or 6)–6

The double remote control head configuration consists of the remote-mount radio and two remote control heads directly attached to the radio, two standard microphones, and two mounting brackets. This configuration was designed to accommodate the needs of emergency vehicles.

Dual Control
Model: 53X7(or 5)–4

The dual control configuration consists of the basic dash-mount radio with a microphone and one remote control head with standard microphone and mounting bracket. This configuration was designed to accommodate the needs of emergency vehicles.

Transit Mobile Radio System
Model: 53X8(or 6)–7

The Transit Mobile Radio System is an integrated communications and information solution for the public transportation market. The configuration consists of the Transit Mobile Radio System Kit (250-5300-900) which includes: Remote Amp interface box, remote control head, 3W external speaker, 25' remote cable, 25' audio interface/remote head interface cable, local audio interface box, PTT adapter box, handset with cradle, headset, and lockable radio mounting bracket. (Pictured with a trunk-mount 5300 radio, sold separately.)

5300 *Series*

RADIO CONTROLS—FRONT

Radio controls indicated are the same for both dash-mount and remote-mount versions.
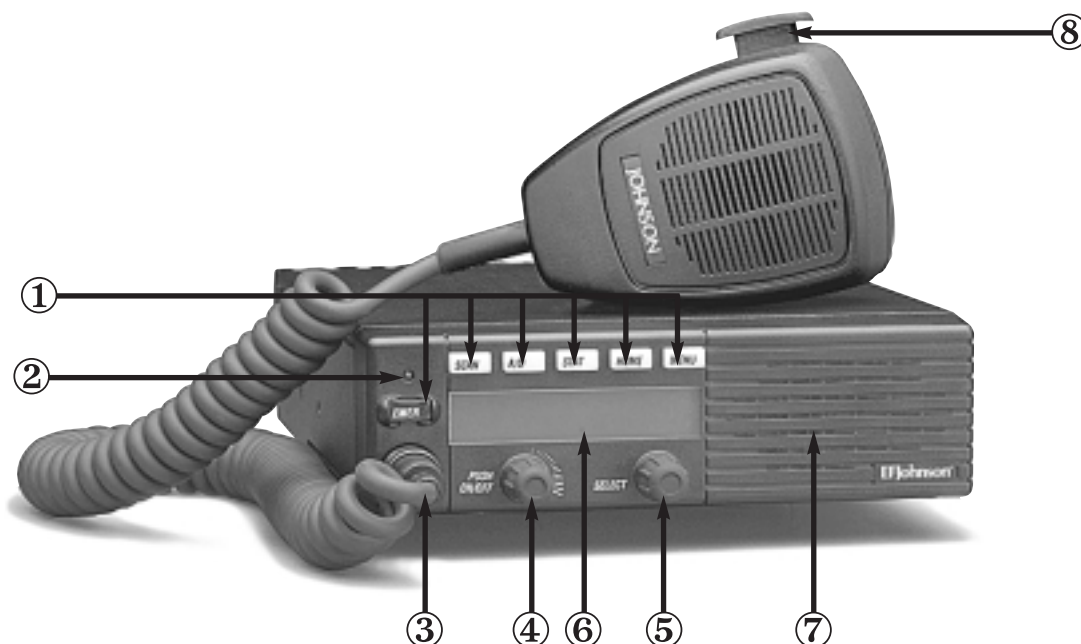
1. **Six Programmable Keys:** May be programmed with any of the 30 switch/button programming features.
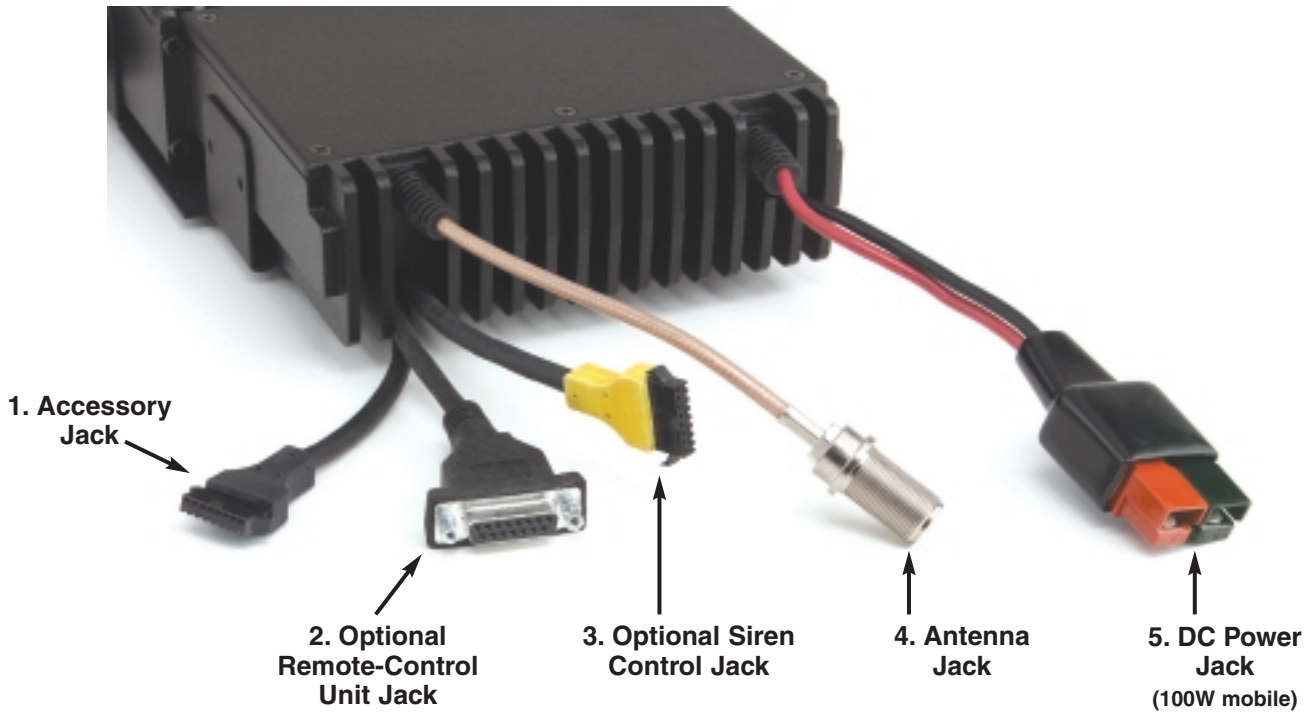
2. **Multi-function Indicator:** This is a bi-color LED that indicates red when the transmitter is keyed and green when there is a busy condition in receive mode.

3. **Microphone Connector:** Accepts connectors for microphone, and is also the connection point for radio programming.

4. **Rotary On/Off/Volume Knob:** Conveniently located to allow easy adjustment to comfortable audio level. Pressing this control turns power on and off. Rotating it sets the volume level.

5. **Select Switch:** Selects zones/channels and is also used for other functions, such as selecting names from a call list. When selecting zones/channels, a bar above the zone or channel display indicates which is being changed.

6. **Alphanumeric Display:** This 10-character area of the display indicates the alias for the selected channel. Depending on the current mode, it may also indicate such things as the frequency, system/group number, status and error messages.

7. **Speaker:** An internal speaker is located behind the grille. An optional external speaker is also available.

8. **PTT Switch:** This push-button switch on the microphone is pressed to talk and released to listen or scan.

RADIO CONTROLS–REAR

1. Accessory Jack

2. Optional Remote-Control Unit Jack

3. Optional Siren Control Jack

4. Antenna Jack

5. DC Power Jack
(100W mobile)

1. **Accessory Jack:** Black connector for connecting optional accessories such as an external speaker, horn alert, and ignition sense line.

2. **Optional Remote-Control Unit Jack:** Connection point for a remote-control unit if used. The cable is optional with front-mount models.

3. **Optional Siren Control Jack:** Yellow connector similar to the accessory jack for connecting the optional Siren Control. Only available for mobiles ordered with Siren Control.

4. **Antenna Jack:** Type N jack for connecting the antenna.

5. **DC Power Jack:** Connection point for the nominal 12-volt, negative ground power source.

RADIO CONTROLS–DISPLAY

10-Character Alphanumeric Display   Zone No.   Status Display   Chnl No.
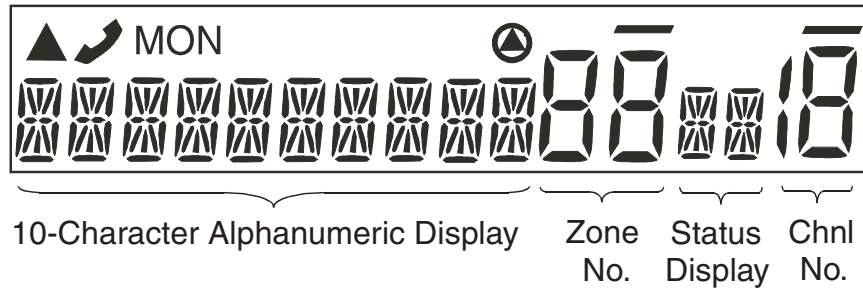
Alphanumeric Display: This 10-character area of the display indicates the alias (unique identification) for the selected channel. Depending on the current mode, it may also indicate such things as the channel frequency, system/group number, status and error messages.

Zone Number: Indicates the currently selected zone from 1 up to 16. A zone is a collection of channels that can be any combination of the conventional and SMARTNET®/SmartZone® types.

Channel Number: Indicates the currently selected channel.

Status Display: These two characters indicate the following status information:

- – This symbol in the left position indicates that the displayed channel is in the scan list (scanned normally).

- – A "P" in the left position indicates that the selected conventional channel is a priority channel.

- – A "2" in the left position indicates that the selected conventional channel is a second priority channel.

- – This rotating clock-like symbol in the right position indicates that scanning is enabled.

- – Indicates that the displayed channel (or talk group) is programmed for telephone calls.

- – Indicates that voice encryption is enabled.

MON – Indicates that the monitoring is enabled by the Monitor option switch (conventional operation only). This switch unsquelches the receiver so that all messages are heard on the channel.

- – The lines above the zone and channel displays indicate which display is changed if the Select switch is turned. To switch between displays, press the Select switch.

- – When this triangle is displayed, the scan list edit mode is indicated.

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

GENERAL
Features & Benefits

FEATURE	BENEFIT
Multiple Operating Modes	Allows user to operate the 5300 in Conventional Analog, Conventional Project 25, Trunked Project 25, and SMARTNET® II/ SmartZone® (analog or digital trunked) modes.
Programmable Channels	Each of up to 16 zones can be programmed with up to 16 channels or talk groups, resulting in up to 256 channels/talk groups available.
Large Liquid Crystal Display	Displayed information is easy to view.
Adjustable Viewing Angle	User may adjust the viewing angle of the display for ease of use.
Programmable Option Switches	Six programmable option keys allow the radio to be customized with preferred features. There are presently 36 different functions for programming these six keys. Each key can be programmed with a different function in the Conventional, SMARTNET/ SmartZone, and P25 trunked modes to control up to 18 functions.
Multiple Scan Modes	The user can choose either a standard scan mode or a "radio wide" scan mode. The standard scan mode scans only the selected type of channels/talk groups, and up to 256 user selectable and programmable scan lists are available, The radio wide type scans all types of channels/talk groups, and one scan list is available and it is not user programmable.
Radio Timers	A timer within the radio can limit the time of each transmission.
Encryption	The 5300 mobile is available with a variety of security options including DES/DES-XL on analog channels, and DES-OFB and AES on digital channels.
Power-Up Password	This programmable feature prevents unauthorized use of the radio by requiring that an 8-digit password be entered to make it operational.
Power Turn-Off Delay	This programmable feature delays power turn off for up to 254 minutes after the vehicle ignition switch is turned off. This allows calls to be received or the horn alert to be active for a time after power is turned off.
Option Buttons F1 – F6	Each button can be programmed for a different function in the Conventional, SMARTNET/SmartZone, and Project 25 trunked modes. Keycap labels may indicate the option button function. A generic "F#" label may also be used.

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

GENERAL

Switch/Button Programming Features

Radio service software is required to program these features to the radio. Please refer to the PCConfigure™ programming manual or the 5300 Series operations manual for further information regarding programming features and functional description of how each feature effects radio operation.

FEATURE	BENEFIT
Backlight	Programmable feature allows user to select high, medium, or off display lighting.
Clear/Secure	Programmable feature that enables and disables the optional secure communications option in the mobile. Clear/Secure can be programmed on a per-channel basis.
Selectable High/Low Power	This programmable feature allows the user to select a high or low transmit power level if allowed on the selected channel or talk group.
Horn Alert	This programmable feature sounds an external alert such as the vehicle horn when certain calls are received such as unit calls in the P25 mode and private and Call Alert (page) calls in the trunked modes.
Surveillance Mode	This programmable feature allows the backlight, all alert tones, and the front panel LED indicator to be disabled by simply pressing an option button.
Home Zone	This programmable feature provides a quick way of returning to a pre-programmed home zone.
Change Keyset	This programmable feature allows the user to select either Keyset 1 and Keyset 2 as the active keyset.
Erase Keys	This programmable feature allows the user to erase all encryption keys in the radio.
External PA	This programmable feature allows speaker audio and/or microphone to be routed to an external PA system (if properly equipped).
Tones On-Off	This programmable feature allows the user to turn alert tones on and off.
Tone Volume Select	This programmable feature allows the user to adjust the relative level of the alert tones.
Standard Scan	This programmable feature turns standard scanning on and off.
Radio Wide Scan	This programmable feature turns radio wide scanning on and off.

CONVENTIONAL - Analog & P25
Features & Benefits

FEATURE	BENEFIT
Selectable Monitor Mode	Monitor mode can be selected by taking the microphone off-hook or by a programmable feature key.
Analog Squelch Control	Radio can be programmed for Carrier Squelch operation or Call Guard® (CTCSS/DCS) on analog channels. Analog users are also able to manually adjust the squelch (if Keypad Programming is available).
Dual Priority Channel Sampling	Each scan list can be programmed with first and second priority channels. When scanning, this forces the radio to periodically monitor the priority channel while listening to a non-priority. Priority sampling currently does not occur when receiving P25 or encrypted calls.
Busy Channel Lockout	Disables the ability to transmit when the radio channel is busy.
Individual ID	Project 25 operation relays the user's individual ID each time the radio transmits. The individual ID of the transmitting radio can also be displayed.
Unit Call List	Allows the user to recall up to 16 radio ID numbers for unit calls (P25 only).
Radio Timers	Timers within the radio allow the programmer to limit the total conversation time and provide a penalty time if user occupies a channel for a longer period than allowed.
DTMF/ANI Signaling	Dual Tone Multi-Frequency tones can be generated for Automatic Number Identification purposes on analog channels.
Encryption	The 5300 mobile is available with a variety of security options including DES/DES-XL on analog channels, and DES-OFB and AES on digital (P25) channels.

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

Features & Benefits—Conventional (Analog & P25)

FEATURE	BENEFIT
Emergency	Programmable feature that sends an emergency alarm and/or call to alert the dispatcher of an emergency situation. The emergency alarm is sent when the Emergency button is pressed and the emergency call is sent when the PTT switch is pressed.
Emergency Hot Mic	Programmable feature that automatically transmits microphone audio for a time after Emergency button is pressed.
Keypad Programming	Programmable feature which allows the user to reprogram channel frequencies, squelch control codes, and various timers. This feature is available to Federal government users only.
OTAR (Over The Air Rekeying)	OTAR is a method of encrypting and sending encryption keys and other related key management messages over the air from a Key Management Facility (KMF) to destination equipment. (P25 only.)

5300 *Series*

CONVENTIONAL - Analog & P25

Switch/Button Programming Features

Radio service software is required to program these features to the radio. Please refer to the PCConfigure™ programming manual or the 5300 Series operations manual for further information regarding programming features and functional description of how each feature effects radio operation.

FEATURE	BENEFIT
Displayed Information	This programmable feature allows the user to toggle the display to indicate either the channel information or the transmit/receive frequency information.
Emergency	This programmable feature initiates an emergency alarm and/or call.
Unit Calls	Programming this feature enables the user to place a call to a specific mobile radio on a Project 25 channel.
Digital Talkgroup Select	This programmable feature allows a user to select a talkgroup from a pre-programmed list on a per channel basis if channel is marked editable (P25 only).
Monitor	This programmable feature allows the user to temporarily disable the squelch control features so that all messages are heard on the channel.
Normal/Selective	This programmable feature allows the user to disable the Call Guard® (CTCSS/DCS) squelch on analog channels and group ID code detect on P25 channels.
Call Guard Code Select	This programmable feature allows the user to temporarily override the Call Guard or NAC code programmed on the selected channel.
Priority	A programmable feature which allows the user to change the assigned first or second priority channel on the current scan list.
Radio Wide Scan	Toggling this programmable feature enables the user to turn the radio wide scan option on and off.
Repeater Talk-Around	This programmable feature allows the radio user to bypass the repeater in order to talk directly to another nearby radio.
Scan On/Off and List Select	This programmable feature allows the user to turn scanning on and off and select which preprogrammed scan list to use.

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

Switch/Button Programming Features–Conventional (Analog & P25)

FEATURE	BENEFIT
Scan Edit	This programmable feature allows the user to reprogram standard scan lists.
Clear/Secure	Programmable feature that enables and disables the optional encryption feature if the channel is programmed for selectable encryption.
Key Select	Programmable feature that allows another encryption key to be selected for the current channel.
OTAR Rekey Request	Programmable feature that sends a message indicating the radio is on the air and rekeying is requested (P25 only).
Status Messaging	Programmable feature allows the user to send predefined status conditions to a dispatcher (P25 only).
Messaging	Programmable feature allows the user to send predefined messages to a dispatcher (P25 only).
Call Alert™	Programmable feature allows the user to send and receive pages (P25 only).
Unit Call	Programming this feature enables the user to place a call to a specific radio on a Project 25 channel.

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

PROJECT 25 - Trunked
Features & Benefits

FEATURE	BENEFIT
Talk Group Capacity Encryption	The 5300 mobile is available with a variety of security options including DES/DES-XL on analog channels, and DES-OFB and AES on digital channels.
Individual IDs	Project 25 operation transmits the user's individual ID each time the radio transmits.
Emergency	Programmable feature that sends an emergency alarm and/or call to alert the dispatcher of an emergency situation. The emergency alarm is sent when the Emergency button is pressed and the emergency call is sent when the PTT switch is pressed.
Busy Queuing	Places the call in a queue if the system is busy. When the system becomes available, the call is automatically placed. (Trunked only.)
Auto-Registration	Permits calls to be automatically routed to the site where the radio is operating. (Trunked only.)
Conversation Control	• Group Call allows the user to make, initiate, or receive a call from another radio or control station. • Unit Call allows the user to initiate or receive a call to/from a specific radio unit.
Priority Calls	When scanning, priority calls are detected on the priority group while listening to other group calls. (Trunked only.)
Dynamic Regrouping	The dispatcher can automatically gather users on a talk group to tactically communicate. (Trunked only.)
Unit Call List	Allows the user to recall up to 16 radio ID numbers for unit calls.
Failsoft Operation	Reassigns radio operation to a predefined conventional channel if the trunked system fails. (Trunked only.)
Site Trunking	Alerts the user that the site has lost communication with the Zone Controller. The site is now a stand alone site.
OTAP (Over The Air Programming)	Enables mobile and portable software to change. a. Programming the radio switches, scan list, phone list, etc. b. Service programming the transmitter and receiver parameters and alignment. c. Upgrading new software versions of the radio operating system. d. Cloning radios for duplicate programming of several radios.* (Future availability.)

* Quoted from Project 25 Statement of Requirements.

5300 Series

PROJECT 25 - Trunked

Switch/Button Programming Features

Radio service software is required to program these features to the radio. Please refer to the PCConfigure™ programming manual or the 5300 Series operations manual for further information regarding programming features and functional description of how each feature effects radio operation.

FEATURE	BENEFIT
Status Messaging	Programmable feature allows the user to send predefined status conditions to a dispatcher
Messaging	Programmable feature allows the user to send predefined messages to a dispatcher.
Call Alert™	Programmable feature allows the user to send and receive pages.
Call Response	This option enables the user to respond to a private call if unit-to-unit calls are not permitted (trunked only).
Clear/Secure	Programmable feature that enables and disables the optional encryption feature if the channel/talk group is programmed for selectable encryption.
Emergency	This programmable feature initiates an emergency alarm and/or call.
Unit Call	Programming this feature enables the user to place a call to a specific radio on a Project 25 channel.
Scan Select	This programmable feature allows the radio to scan multiple talk groups. Pages and unit-to-unit calls are received while scanning.
Scan List Select	This programmable feature allows the user to select one of up to 256 scan lists.
Scan List Edit	This programmable feature allows the user to edit the channels/talk groups in a scan list.
Site Lock	Programming this feature allows the user to prevent the radio from searching for a new site. (Trunked only.)
Site Search	This programmed button allows the user to search for a new site when the radio is in a weak signal area. (Trunked only.)

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

SMARTNET® II / SMARTZONE® TRUNKING
Features & Benefits

FEATURE	BENEFIT
Talk Group Capacity	Up to 256 talk groups are programmable.
Conversation Control	• Group Call allows user to make, initiate, or receive a call from another radio or control station.
	• Enhanced Private Conversation™ Call allows the user to initiate or receive a call to/from a specific radio unit.
	• Telephone Call allows the user to place and receive calls over the public telephone system.
Emergency	Programmable feature that sends an emergency alarm and/or call to alert the dispatcher of an emergency situation. The emergency alarm is sent when the Emergency button is pressed and the emergency call is sent when the PTT switch is pressed
Failsoft Operation	Reassigns radio operation to a pre-defined conventional channel if the trunked system fails.
Priority Calls	Calls are detected on priority groups while listening calls on other groups while scanning.
Dynamic Regrouping	The dispatcher can automatically gather users on a talk group to receive a message.
Encryption	The 5300 mobile is available with a variety of security options including DES/DES-XL on analog channels, and DES-OFB and AES on digital channels.
Incoming Call ID	Allows the user to view the ID number of an incoming talk group call. If the ID number is saved in the unit, the ID numbers' alias is displayed.
Private Call List	Allows the user to preprogram up to 16 ID numbers for private calls. The user has the option to view the user-defined alias for that ID number.
Telephone Call List	Up to 16 telephone numbers can be preprogrammed for making telephone calls.

5300 Series

SMARTNET® II / SMARTZONE® TRUNKING
Switch/Button Programming Features

Radio service software is required to program these features to the radio. Please refer to the PCConfigure™ programming manual or the 5300 Series operations manual for further information regarding programming features and functional description of how each feature effects radio operation.

FEATURE	BENEFIT
Status Messaging	Programmable feature allows the user to send predefined status conditions to a dispatcher
Messaging	Programmable feature allows the user to send predefined messages to a dispatcher.
Call Alert™	Programmable feature allows the user to send and receive pages.
Clear/Secure	Programmable feature that enables and disables the optional encryption feature if the channel/talk group is programmed for selectable encryption.
Call Response	This option enables the user to respond to a private call if unit-to-unit calls are not permitted.
Emergency	This programmable feature initiates an emergency alarm and/or call.
Phone	A programmable feature which allows the user to answer incoming telephone calls by pressing the Phone button to answer and again to disconnect the telephone patch.
Private Call	Allows the user to place a call to a specific radio unit.
Scan Select	This programmable feature allows the radio to scan multiple talk groups. Pages and unit-to-unit calls are received while scanning.
Scan List Select	This programmable feature allows the user to select one of up to 256 scan lists.
Scan List Edit	This programmable feature allows the user to edit the channels/talk groups in a scan list.
Site Lock	Programming this feature allows the user to prevent the radio from searching for a new site (SmartZone only).
Site Search	This programmed location allows the user to search for a new site when the radio is in a weak signal area (SmartZone only).

5300 *Series*

DIGITAL/ANALOG/ENCRYPTED MOBILE RADIO

EFJohnson®

COMPETITIVE COMPARISON

EFJohnson -vs- Motorola
SMARTNET® II / SmartZone® Mobiles
800 MHz

Feature	LCS 2000	9800	MCS 2000	5300
Remote Mount	NO	**Optional**	Optional	**Optional**
Dimensions (H x W x D)	1.73" x 6.61" x 5.67"	2.1" x 6.0" x 7.5"	1.73" x 6.61" x 6.31"	2.1" x 7.15" x 8.3"
Weight	2.67 lbs	3.5 lbs	3.89 lbs	5 lbs
Display	3 Char.	16 Char. LCD	8, 14, 28	16 Char.
Telephone Interconnect	Optional	**Standard**	Optional	**Standard**
Enhanced Private Call/Call Alert	Standard	Standard	Standard	Standard
Emergency Call/Alarm	Standard	Standard	Standard	Standard
Talkgroups/Channels	256†	256	256	256
SmartZone RSSI Roaming	Standard	Standard	Standard	Standard
SmartZone Preferred Site	Standard	Standard	Standard	Standard
SmartZone Forced Site Search	Standard	Standard	Standard	Standard
Priority Scan	Standard	Standard	Standard	Standard
Display Labels	NO	**Standard**	Optional	**Standard**
Time-Out Timer	NO	**Standard**	Optional	**Standard**
Repeater Talkaround	Standard	Standard	Standard	Standard
Conventional Scan	Standard	Standard	Standard	Standard
Home Zone	Standard	Standard	Standard	Standard
Selectable Power Levels	NO	**Standard**	NO	**Standard**
Conversation Timer	NO	**Standard**	Optional	**Standard**
Penalty Timer	NO	**Standard**	Optional	**Standard**
DTMF/ANI System	Optional	Optional	Optional	Optional
Power Up On Home Zone	Standard	Standard	Standard	Standard
Backlight On Time Adjustable	Optional	**Standard**	Optional	**Standard**
View Radio ID	NO	**Standard**	Standard	Standard
Send Message From List	NO	**Standard**	Optional	**Standard**
Send Status Update From List	NO	**Standard**	Optional	**Standard**
Dynamic Regrouping	Standard	Standard	Standard	Standard
View Current Site	NO	**Standard**	Optional	**Standard**
Lock/Unlock Site	Standard	Standard	Standard	Standard

22

Competitive Comparison *(Continued)*

Feature	LCS 2000	9800	MCS 2000	5300
TRANSMITTER				
Channel Spacing	25 kHz	25 kHz	25 kHz	25kHz
Freq Stability (-30 to 60 C +25 Ref)	± 2.5ppm	**± 1.5ppm**	± 2.5ppm	**± 1.5ppm**
Power	15W or 10W	15W or 30W	"I,II -15W, III - 35W"	10W/35W Var.
Modulation Limiting/NPSPAC	5 kHz/4 kHz	5 kHz/4 kHz	5 kHz/4 kHz	5 kHz/4 kHz
FM Hum & Noise	−40dB	**−45dB**	−40dB	**−45dB**
Audio Response	+1 to − 3 dB	+1 to − 3 dB	+1 to − 3 dB	300-3000Hz
Audio Distortion	≤5%	3%	2%	3%
Spurious & Harmonic Emissions	−56 dB	−70 dB	−70 dB	−70 dB
RECEIVER				
Channel Spacing	25 kHz	25kHz	25 kHz	25kHz
NPSPAC	12.5 kHz	12.5 kHz	12.5 kHz	12.5KHz
Freq Stability (-30 to 60 C +25 Ref)	± 2.5ppm	**± 1.5ppm**	± 2.5ppm	**± 1.5ppm**
Sensitivity (12dB SINAD)	.35uV	.35uV	.30uV	.35uV
Intermodulation	−65dB	−70dB	−80dB	−73dB
Adjacent Channel Selectivity	−65dB	−70dB	−80dB	−75dB
Spurious Rejection	−65dB	−70dB	−90dB	−75dB
Rated Audio Distortion	5%	3%	3%	3%
Hum and Noise	−40dB	−40dB	−40dB	−40dB
Audio Response	+ 1 to − 3 dB	+ 1 to − 3 dB	+ 1 to − 3 dB	+ 1 to − 3 dB
Rated Audio	Internal: 4W	5W	Internal: 7.5W	Internal: 4.5W
	External: 7.5W		External: 13W	External: 12W
MIL STANDARD 810 C, D & E				
Low Pressure	YES	YES	YES	YES
High Temp	YES	YES	YES	YES
Low Temp	YES	YES	YES	YES
Thermal Shock	YES	YES	YES	YES
Dust	YES	YES	YES	YES
Shock	YES	YES	YES	YES
Solar Radiation	NO	**YES**	YES	**YES**
Rain	NO	NO	YES	**YES**
Humidity	NO	**YES**	YES	**YES**
Salt Fog	NO	NO	YES	**YES**
Vibration	NO	**YES**	YES	**YES**

ACCESSORIES

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Audio Accessories and Key Caps

1. **Standard Microphone**
    250-0740-310
    Rugged design. Heavy-duty neoprene coil cord withstands harsh environments.

2. **DTMF Environmentally-sealed WR805 Microphone**
    250-9650-015
    Protected against harsh environmental conditions such as rain, sand, and dust. Backlighted.

3. **DTMF Standard Microphone**
    589-0016-028
    Backlighted.

    Desktop Microphone (Pictured on page 27)
    P/N 250-742-011
    Includes Monitor and a PTT button. Ideal for dispatch console or other types of control stations.

4. **12-Watt External Speaker**
    250-0151-006
    Environmentally sealed. Meets Mil 810 specs for shock, vibration, and driven rain. Provides 12W of audio power for noisy environments.

5. **HHC 12-Watt External Speaker**
    250-0151-005
    Same as 250-0151-006. Connects to junction box for use with Handheld Controller.

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6. **Key Cap Kit**
    587-5300--001
    Kit includes 30 front-panel key caps labeled for various functions and 5 plugs that can be inserted in the front panel if a key is not used.

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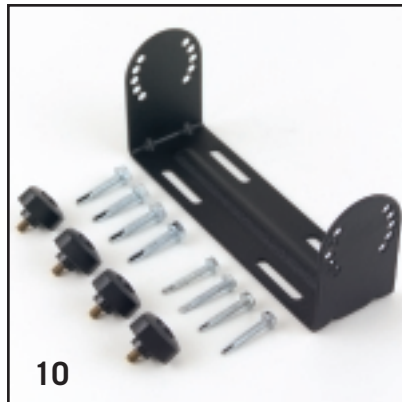
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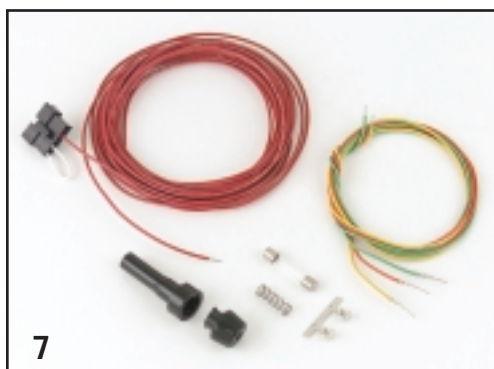
Cables/Wiring

7. **Accessory Wire Kit**
    023-9750-011
    Provides access to options such as external speakers and horn alert.

8. **22' Power Cable and Hardware Kit**
    023-9750-010
    Includes cable and all necessary hardware. Allows radio to be mounted farther from the battery.

EFJohnson®

ACCESSORIES

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Mounting Hardware

9. Lockable Mounting Tray
    585-7000-185
    Includes mounting tray, two keys, and all necessary hardware. Works with standard power dash and remote mount transceivers.

10. Standard Mounting Kit
    023-9750-012
    Includes mounting bracket and hardware, keycap removal tool, and spare fuses.

11. Mounting Bracket for 100W radio
    017-9700-009

12. Remote Control Head Mounting Bracket
    017-2226-050

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Antennas

13. UHF/VHF Roof-Mount Antenna
    501-0012-001
    108-512 MHz antenna, fits into 3/8" mounting hole, includes a UHF connector. Requires 515-3102-076 adapter.

14. RF Coax Adapter
    515-3102-076
    Connects the UHF/VHF antenna (501-0012-001) with the radio. (UHF female to N male)

15. 800 MHz Roof-Mount Antenna
    585-1155-011
    806-869 MHz antenna, 3dB, fits into 3/8" mounting hole, includes pro-flex cable and N male connector.

EFJohnson®

ACCESSORIES

16

Remote-Mount Accessories

16. Handheld Controller (HHC) Kit
250-5300-101

The HHC Kit includes the Handheld Controller, junction box, and 17' HHC remote cable (597-2002-267).

17. HHC Remote Cable
597-2002-267

A 17' remote cable, enables communication between the junction box and the 5300 radio.

18. Remote Radio Control Head
023-5300-081

Compact design enables easy control from front of the vehicle, while the 5300 radio is mounted in a different location.

19. Transit Mobile Radio System Kit
250-5300-900

Kit makes a remote-mount 5300 mobile into an integrated communications and information solution for the public transportation market. Kit consists of Remote Amp interface box, remote control head, 3W external speaker, 25' remote cable, 25' audio interface/remote head interface cable, local audio interface box, PTT adapter box, handset with cradle, headset, and lockable radio mounting bracket. Radio is not included.

20. 17' Remote Cable
597-2002-262
50' Remote Cable
597-2002-263

Provides connection between the Remote Control Head and the 5300 radio.

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EFJohnson

ACCESSORIES

21

Dash-Mount Accessories

21. 5300 Remote Control Head Kit, Single or Dual Control
   250-5300-001

Compact design enables easy control from front of the vehicle, while the 5300 radio is mounted in a different location. The RCH Kit includes the Remote Control Head, blank front radio panel, and 17' remote cable. With this kit, a 5300 mobile can be set up as either a single remote control (replace the radio front with the blank panel), or as a dual control, retaining control at the transceiver as well as the RCH.

22

Siren Control

22. Siren Control Kit
   250-5300-100
   Siren performs as a PA when connected to mobile. Kit includes Siren Controller, controller cable, and amplifier box.

23. Siren Loudspeaker Model TS100
   585-5300-007
   For lightbar installation.

24. Siren Loudspeaker Model MC100
   585-5300-009
   Compact for behind grill installation.

25. Siren Wire Kit
   023-5300-101
   For connecting amplifier to radio in a remote setting.

23   **24**

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Control Station

26. 15 amp Power Supply
   585-4001-202 (120 Volt)
   585-4001-204 (230 Volt)
   Power Supply for Control Station. Provides conversion from regular outlet to 13 Volt DC power supply.

27. Desktop Microphone
   P/N 250-742-011
   Includes Monitor and a PTT button. Ideal for dispatch console or other types of control stations.

ACCESSORIES

28

29

30

Programming Accessories

28. Remote Programming Interface (RPI) Box
023-5300-000
Interface box to be connected between radio and PC. Provides interface for flash programming modes. Cables must be ordered separately.

29. Radio Programming Cable
023-5300-005
Provides interface between RPI and 5300 programming port.

30. Computer Interface Cable
597-5900-002
DB-9 cable provides interface between RPI and 5300 programming port. Used with RPI box (023-5300-000). Ethernet.

31. Programmer Adapter for HHC
023-5300-140
Adapts the Radio Programming Cable (023-5300-005) to be used for programming of the Handheld Controller equipped 5300 radio.

NOT PICTURED
**PCConfigure™ Programming Kit**
250-5300-004
Includes Radio Personality Programming Cable (023-5300-005), Windows®-compatible software (023-9998-488), and manual on CD. Requires Windows 95 or later.

PCConfigure™ Programming Software
023-9998-488
Windows-compatible software on CD for personality programming of 5300 mobiles. Requires Windows 95 or later.

PCTune Tuning Software
023-9998-499
Windows-compatible software on CD.

31
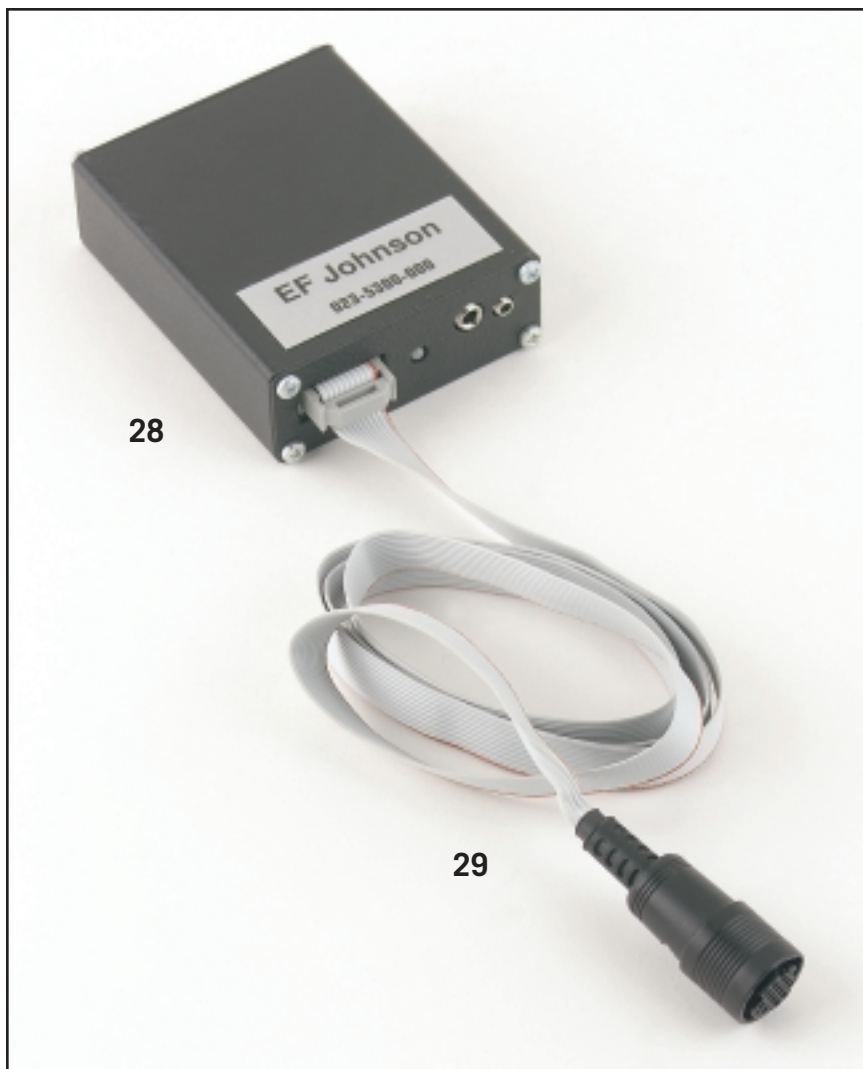
5300 PACKAGING

–What comes with the Base Radio–

The following are included in all 5300 base models. Please note software is NOT included in the base model and must be added to the model string and list price. See 5300 Series price list.

1. RADIO TRANSCEIVER

You have a choice in the base model of four frequency bands and whether you want dash-mount or remote-mount configurations.

2. MICROPHONE

The standard microphone (250–0740–310) is packaged with the 5300 dash-mount base model. Other microphones are available and can be ordered separately. See the 5300 Mobile Accessories price page.

The microphone for the remote-mount configuration comes with the type of control head option you choose.

3. CABLING/WIRING

Included with each dash and remote-mount radio is a 22 ft. power cable with hardware kit and accessory wire kit.

4. MOUNTING BRACKET

Included with each dash and remote-mount radio is a standard mounting bracket. 100 watt transceivers are packaged with a slightly larger mounting bracket. For additional mounting brackets, use accessory part number 023–9750–012 (standard) or 017–9700–009 (100W).

5. QUICK REFERENCE GUIDE

The quick reference guide includes descriptions and graphics of each of the 5300 hardware features. Additional copies can be ordered, using accessory part number 002–5300–000.

6. WARRANTY REGISTRATION CARD

Customer should fill out and return to EFJohnson for warranty registration of the radio.

FACTORY CUSTOMER SERVICE

Please refer to the 5300 mobile operator's manual for technical information. The Customer Service Department is available to provide any additional technical assistance needed on the 5300 mobile operations or programmable functions. When contacting the Customer Service Department, please ask to speak to the 5300 service specialist. Customer Service hours are from 8:00 a.m. to 5:00 p.m. (CST), Monday through Friday. Within the United States, use this toll free number:

1-800-328-3911

From outside the United States, use the following telephone or fax numbers:

(507) 835-6970 (Customer Service Direct Phone)
(507) 835-6969 (Technical Service Direct Fax)

You may also contact the Customer Service Department by mail at the following address:

E.F. Johnson Company, Customer Service Department,
299 Johnson Avenue, P.O. Box 1249, Waseca, MN 56093-0514

E-mail: customerservice@efjohnson.com

PRODUCT WARRANTY

The warranty statement for the 5300 mobile is available upon request. Please direct inquiries to:

E.F. Johnson Company, Warranty Department,
299 Johnson Avenue, P.O. Box 1249, Waseca, MN 56093-0514

The Warranty Department can be contacted for Warranty Service Reports, Claim Forms, Warranty Return Status, or any other questions regarding product warranty or warranty service.

If you have questions regarding the 5300 Extended Warranty Plan, you may contact the Warranty Department, your direct EFJohnson sales representative, or call the following number:

(507) 835-6222

When returning equipment for warranty repair, the Depot Service Department should be contacted for shipping instructions. The proper paperwork will be provided to return the equipment.

(507) 835-6936 (Depot Service Direct Line)
(507) 835-6979 (Depot Service Direct Fax)

All 5300 mobiles and accessories should be properly packed and postage prepaid for shipment.

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